



**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**

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21M1/0912

STOEL RIVES SOLEY JONES & GREY  
900 SW FIFTH AVENUE SUITE 2300  
PORTLAND OR 97204-1268

**NOTICE OF ALLOWANCE  
AND ISSUE FEE DUE**

☐ Note attached communication from the Examiner

☐ This notice is issued in view of applicant's communication filed \_\_\_\_\_

SERIES CODE/SERIAL NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
08/276,797	07/18/94	030	MULLIS, G	08/12/96
First Named Applicant	GREEN, MARK D.			

TITLE OF INVENTION: ULTRAVIOLET LASER SYSTEM AND METHOD FOR FORMING VIAS IN MULTI-LAYERED TARGETS

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2686093:3703	219-121.710	F11	UTILITY	NO	\$1250.00	12/12/96

**THE APPLICATION IDENTIFIES ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.**

**THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.**

**HOW TO RESPOND TO THIS NOTICE:**

I. Review the SMALL ENTITY Status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the patent and Trademark Office of the change in status, or
- B. If the Status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, pay of 1/2 the FEE DUE shown above.

II. Part B of this notice should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B should be completed and returned. If you are charging the ISSUE FEE to your deposit account, Part C of this notice should also be completed and returned.

III. All communications regarding this application must give series code (or filing date), serial number and batch number. Please direct all communication prior to issuance to Box ISSUE FEE unless advised to contrary.

**IMPORTANT REMINDER: Patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

PATENT AND TRADEMARK OFFICE COPY

## PART C—CHARGE TO DEPOSIT ACCOUNT

742-1,230.00  
561-30.00

## 1. CORRESPONDENCE ADDRESS

21M1/0912  
STOEL RIVES BOLEY JONES & GREY  
900 SW FIFTH AVENUE SUITE 2300  
PORTLAND OR 97204-1268

SERIES CODE/SERIAL NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
09/276,787	07/18/94	030	MILLS, G	2105 09/12/96
First Named Applicant	EWEN, MARK D.			

## TITLE OF INVENTION

ULTRAVIOLET LASER SYSTEM AND METHOD FOR FORMING VIAS IN MULTI-LAYERED TARGETS

ATTYS DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2686033-37US	219-121.710	E11	UTILITY	NO	\$1250.00	12/12/96

DO NOT USE THIS SPACE

820 TD 10/09/96 08276797  
1 142 1,250.00 CK  
1 561 30.00 CK

Electro Scientific Industries, Inc.

Portland, Oregon

## 2a. The following fees are enclosed:

☒ Issue Fee ☒ Advance Order - # of Copies 10

## 2b. The following fees should be charged to:

DEPOSIT ACCOUNT NUMBER 19-4455

☐ Issue Fee ☐ Advance Order - # of Copies☒ Any Deficiencies in Enclosed Fees

The COMMISSIONER OF PATENTS AND TRADEMARKS is requested to apply the Issue Fee to the application identified above.

(Authorized Signature)

Michael L. Levine, Reg No 33,947

NOTE: The Issue Fee will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the Patent and Trademark Office.

TRANSMIT THIS FORM WITH PART B WHEN AUTHORIZING USE OF A DEPOSIT ACCOUNT

# Notice of Allowability

Application No.  
08/276,797

Applicant(s)  
Owen et al.

Examiner  
Gregory L. Mills

Group Art Unit  
2106



All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course.

☒ This communication is responsive to the amendment and declaration received 8/9/96.

☒ The allowed claim(s) is/are 1-11, 13, 15-17, and 22-36.

☐ The drawings filed on \_\_\_\_\_ are acceptable.

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE **THREE MONTHS** FROM THE "DATE MAILED" of this Office action. Failure to timely comply will result in ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.

☒ Applicant MUST submit NEW FORMAL DRAWINGS (*facsimiles not acceptable*)

☐ because the originally filed drawings were declared by applicant to be informal.

☒ including changes required by the Notice of Draftsperson's Patent Drawing Review, PTO-948, attached hereto or to Paper No. 6.

☐ including changes required by the proposed drawing correction filed on \_\_\_\_\_, which has been approved by the examiner.

☐ including changes required by the attached Examiner's Amendment/Comment.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any response to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

## Attachment(s)

☐ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, *Filed* Paper No. 10/30/95

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

☒ Interview Summary, PTO-413

☐ Examiner's Amendment/Comment

☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

☒ Examiner's Statement of Reasons for Allowance

*T. Walberg*  
TERESA J. WALBERG  
SUPERVISORY PATENT EXAMINER  
GROUP 2100

Art Unit: 2106

### REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance:


The declaration of Mr. Mark Owen filed 8/9/96 establishes that the fall 1993 issue of Laser Pulse discloses the work of the present inventive entity and so does not qualify as prior art against the claimed invention. The closest actual prior art of record is U.S. Patent 5,063,280 to Inagawa et al., which is similar to the claimed invention in that it discloses a method of laser processing a multilayer target comprising generating UV laser pulses of 248 nm and applying the pulses to the target to remove at least two layers therefrom. The claimed invention requires the use of a non-excimer laser operated at a repetition rate greater than about 1kHz, and specifies a pulse width shorter than 100 ns and an average output power greater than 10 mW. The claims differ from Inagawa in that Inagawa uses an excimer laser and does not disclose the repetition rate, pulse length, or average output power. It is first noted that no other prior art of record teaches, suggests, or otherwise motivates a person of ordinary skill in the art to modify Inagawa to arrive at the claimed invention. Further, the claimed invention would not be arrived at through routine experimentation and optimization of Inagawa's process because the excimer lasers used by Inagawa and available at the time the invention was made were not capable of achieving repetition rates above about 1kHz. (Typical excimer lasers can reach repetition rates of at best about 500 Hz.) The disclosure of a particular apparatus implicitly teaches using only those process parameters which can be achieved with that apparatus, absent some particular teaching to

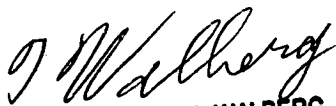
Art Unit: 2106

the contrary. Inagawa therefore suggests only the use of relatively low repetition rates, and there is nothing in the prior art which would motivate a person of ordinary skill in the art to depart from that teaching.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory Mills whose telephone number is (703) 308-1633. Faxes may be sent to Group 2100 at (703) 305-3431 or (703) 305-3432

  
Gregory Mills  
September 10, 1996

  
TERESA J. WALBERG  
SUPERVISORY PATENT EXAMINER  
GROUP 2100